gettler — ryan inc.

91 JUN 19 AM 11:36

June 18, 1991

Alameda County
Department of Environmental Health
80 Swan Way, Suite 200
Oakland, California 94621

Attention: Mr. Paul Smith

Reference: Shell Service Station
350 Grand Avenue
Oakland, California
WIC 204-5510-0204

Mr. Smith:

As requested by Mr. Jack Brastad of Shell Oil Company, we are forwarding a copy of the June 14, 1991 Site Update report for the above referenced location. This report presents the results of the 1991 second quarter ground-water sampling.

Should you have any questions or comments please do not hesitate to call.

Sincerely,

John Werfal
Project Manager

enclosure

cc: Tom Callaghan, Regional Water Quality Control Board
Jack Brastad, Shell Oil Company.

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

GeoStrategies Inc.

SITE UPDATE

Shell Service Station
350 Grand Avenue
Oakland, California
WIC 204-5510-0204

766701-4

June 14, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545

June 14, 1991

Gettler-Ryan Inc.
2150 West Winton Avenue
Hayward, California 94545

Attn: Mr. John Werfal

Re: SITE UPDATE
Shell Service Station
350 Grand Avenue
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1991 second quarter ground-water sampling performed by Gettler-Ryan Inc. (G-R) for the above referenced site (Plate 1). The scope of work presented in this document was performed at the request of Shell Oil Company. Field work and laboratory analysis methods were performed to comply with current State of California Water Resources Control Board (SWRCB) guidelines.

SITE BACKGROUND

There are currently three monitoring wells at the site; Wells S-1 through S-3 (Plate 2). These wells were installed in January, 1991, by GSI to evaluate the vertical and horizontal extent of petroleum hydrocarbons in soils and shallow groundwater beneath the site.

Quarterly monitoring and sampling of wells began in January 1991. Ground-water samples have been analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) and as Diesel (TPH-Diesel) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020.

CURRENT QUARTERLY SAMPLING RESULTS

Potentiometric Data

Prior to ground-water sampling, depth to water-level measurements were obtained in each well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of well box and recorded to the nearest $\pm$0.01 foot. Corresponding elevations to Mean Sea Level (MSL) have been plotted and contoured on Plate 3 and are summarized in Table 1. Apparent shallow ground-water flow is to the north with a calculated hydraulic gradient of 0.046.

Floating Product Measurements

Each well was checked for the presence of floating product using a portable oil-water interface probe. A clear acrylic bailer was used to confirm interface probe results. Floating product was not detected in the wells this quarter.

Ground-water Analytical Data

Ground-water samples were collected on April 25, 1991. The samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) and as Diesel (TPH-Diesel) according to EPA Method 8015 (Modified), and for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020.

TPH-Gasoline was detected in Well S-2 at a concentration of 32 parts per million (ppm). Benzene and TPH-Diesel were detected in Well S-2 at concentrations of 2.9 ppm and 20 ppm, respectively. These data are summarized in Table 2 and included in Appendix A. A chemical concentration map for TPH-Gasoline, TPH-Diesel and benzene is presented on Plate 4. Historical chemical analytical data are presented in Table 3.

Quality Control

The Quality control sample for this quarter's sampling was a trip blank. This sample was prepared in the laboratory to evaluate laboratory and field handling procedures of samples and assess analytical precision. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Timothy J. Walker
Geologist

John F. Vargas
Senior Geologist
R.G. 5046

REGISTERED GEOLOGIST
JOHN F. VARGAS
NO. 5046
STATE OF CALIFORNIA

TJW/JFV/kjj

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Potentiometric Map
Plate 4. TPH-Gasoline/TPH-Diesel/Benzene Concentration Map

Appendix A: Laboratory Analytical Report
Chain-of-Custody

QC Review: _____

766701-4

TABLE 1

FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY (uMHOS/cm)
S-1	25-Apr-91	3	17.6	20.84	7.37	----	13.47	2	7.11	65.7	820
S-2	25-Apr-91	3	15.0	21.24	8.24	----	13.00	2	6.69	65.0	784
S-3	25-Apr-91	3	15.0	22.70	12.96	----	9.74	1	6.59	62.9	699

Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. pH values reported in pH units.
4. Static water-levels corrected for floating product (conversion factor = 0.80).
5. Well S-3 contained insufficient water for diesel samples.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)
S-1	25-Apr-91	03-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
S-2	25-Apr-91	03-May-91	32.	2.9	0.48	1.4	2.3	20. *
S-3	25-Apr-91	03-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	----	03-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

CURRENT DHS ACTION LEVELS
Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel
PPM = Parts Per Million

TB = Trip Blank
NA = Not Analyzed

Note: 1. All data shown as <x are reported as ND (none detected).
2. DHS Action Levels and MCLs are subject to change pending State review.

* Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.

766702-4

TABLE 3

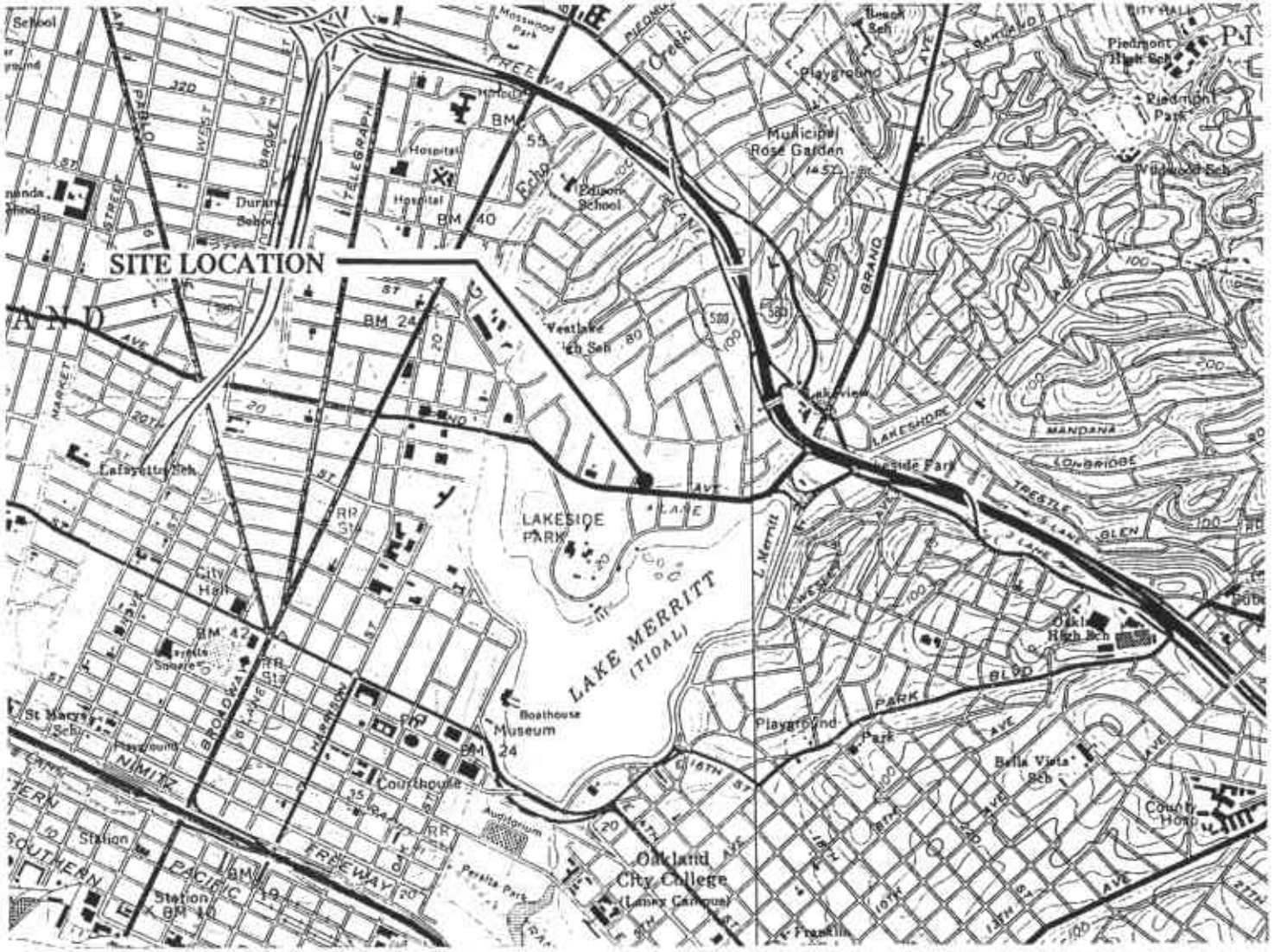
HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)
23-Jan-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
25-Apr-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
23-Jan-91	S-2	2.5	0.55	0.015	0.033	0.042	1.2
25-Apr-91	S-2	32.	2.9	0.48	1.4	2.3	20.*
25-Apr-91	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A

Current Regional Water Quality Control Board Maximum Contaminant Levels
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

Current DHS Action Levels Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million
* Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.
NOTE: 1. DHS Action levels and MCL's are subject to change pending State of California review.
2. All data shown as <X are reported as ND (none detected).



Base Map: USGS Topographic Map

GeoStrategies Inc.

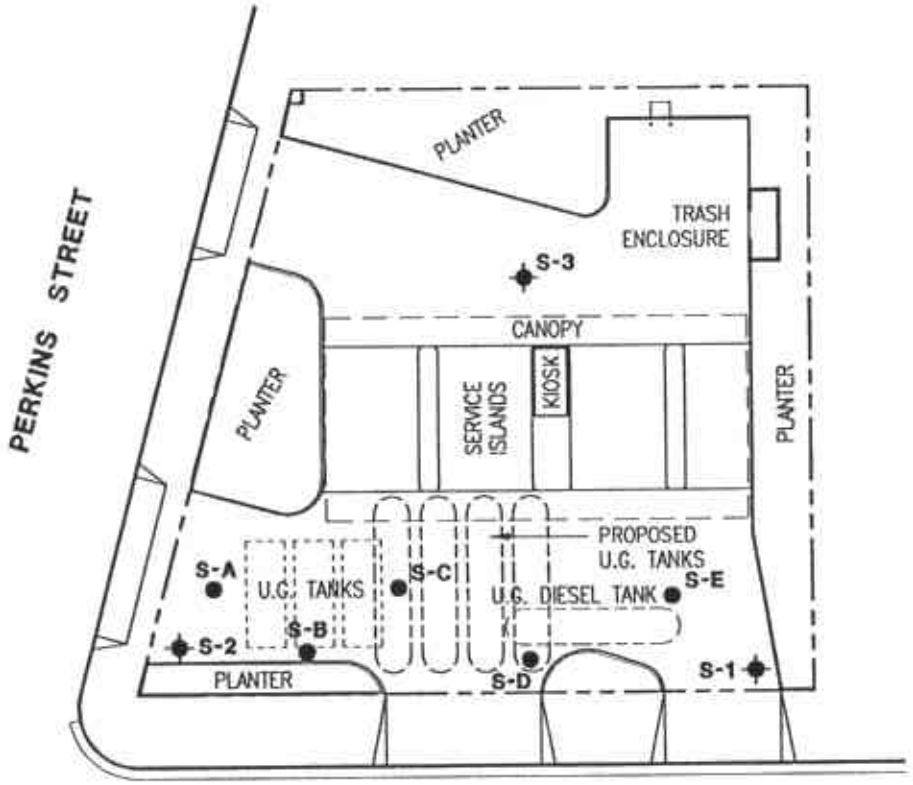
VICINITY MAP
Shell Service Station
350 Grand Avenue
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7667		3/91	

EXPLANATION

- Ground-water monitoring well
- Soil boring



Base Map: Shell Site Plan dated 12-21-89

N

0 40

Scale in Feet

GeoStrategies Inc.

SITE PLAN
Shell Service Station
350 Grand Avenue
Oakland, California

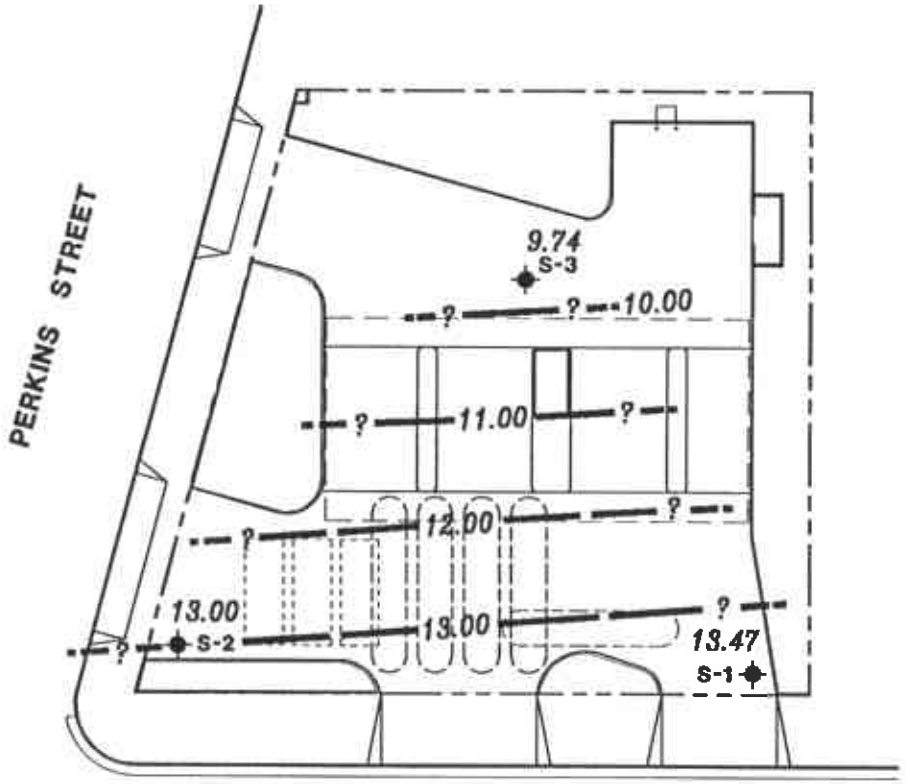
PLATE 2

JOB NUMBER 766702-4

REVIEWED BY

DATE 6/91

REVISED DATE



EXPLANATION

- Ground-water monitoring well
- 99.99 — Ground-water elevation contour Approximate Gradient = 0.046
- *99.99* — Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on April 25, 1991

Note: Contours may be influenced by irrigation practices and/or site construction activities.

N

0 40

Scale in Feet

Base Map: Shell Site Plan dated 12-21-89

GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
350 Grand Avenue
Oakland, California

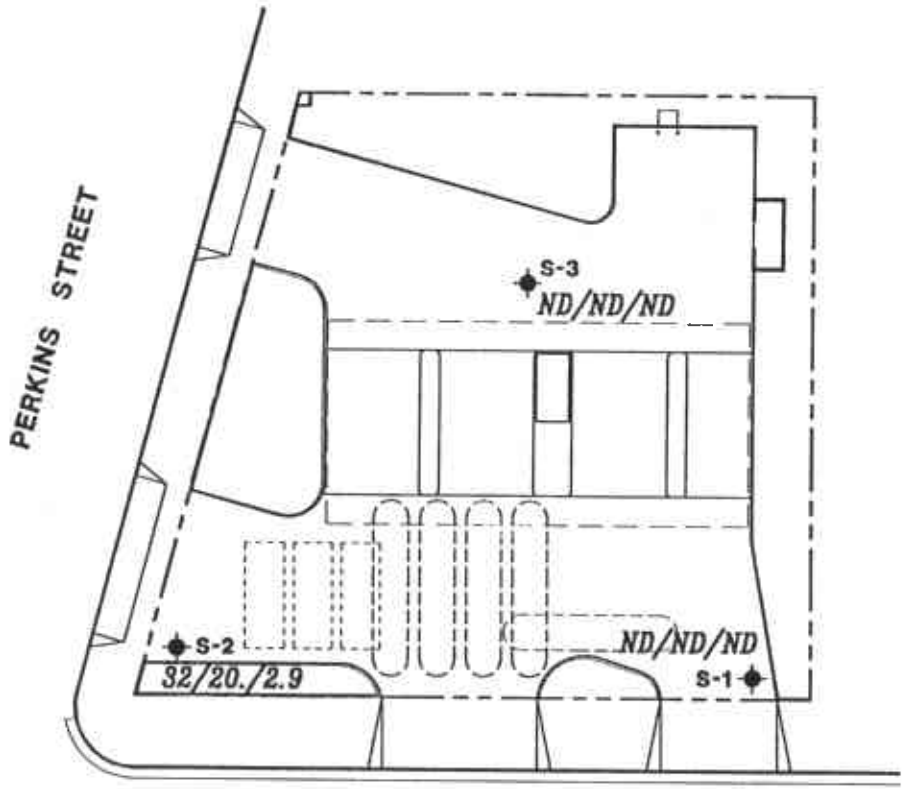
PLATE
3

JOB NUMBER
766702-4

REVIEWED BY

DATE
6/91

REVISED DATE



EXPLANATION

- ◆ Ground-water monitoring well
- *A/B/C* TPH-G/TPH-D(Total Petroleum Hydrocarbons calculated as Gasoline/Diesel)/Benzene concentrations in ppm sampled April 25, 1991
- *ND* Not Detected (See laboratory reports for detection limits)

N

0 40

Scale in Feet

Base Map: Shell Site Plan dated 12-21-89

GeoStrategies Inc.

TPH-G/TPH-D/BENZENE CONCENTRATION MAP
Shell Service Station
350 Grand Avenue
Oakland, California

PLATE 4

JOB NUMBER 766702-4

REVIEWED BY

DATE 6/91

REVISED DATE

APPENDIX A
ANALYTICAL LABORATORY REPORT
AND CHAIN-OF-CUSTODY

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

RECEIVED
MAY 1 5 1991
GETTLER-RYAN INC.
GENERAL CONTRACTORS

CERTIFICATE OF ANALYSIS

Shell Oil Company
Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Date: 05/14/91

Work Order: T1-04-377 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3667,350 Grand Ave, Oakland
Date Received: 04/26/91
Number of Samples: 4
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-1
SAMPLE DATE: 04/25/91
LAB SAMPLE ID: T104377-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/03/91
Low Boiling Hydrocarbons	Mod.8015		05/03/91
High Boiling Hydrocarbons	Mod.8015	05/08/91	05/12/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None
High Boiling Hydrocarbons calculated as Diesel	0.05	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-2
SAMPLE DATE: 04/25/91
LAB SAMPLE ID: T104377-02
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/03/91
Low Boiling Hydrocarbons	Mod.8015		05/03/91
High Boiling Hydrocarbons	Mod.8015	05/08/91	05/13/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	2.5	32.
BTEX		
Benzene	0.0025	2.9
Toluene	0.0025	0.48
Ethylbenzene	0.0025	1.4
Xylenes (total)	0.0025	2.3
High Boiling Hydrocarbons calculated as Diesel	0.3	20. #

Comments:
Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-3
SAMPLE DATE: 04/25/91
LAB SAMPLE ID: T104377-03
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/03/91
Low Boiling Hydrocarbons	Mod.8015		05/03/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: TRIP BLANK
SAMPLE DATE: not spec
LAB SAMPLE ID: T104377-04
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/03/91
Low Boiling Hydrocarbons	Mod.8015		05/03/91
High Boiling Hydrocarbons	Mod.8015	05/08/91	05/12/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None
High Boiling Hydrocarbons calculated as Diesel	0.05	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T104377-05A
EXTRACTION DATE: 05/08/91
ANALYSIS DATE: 05/12/91
ANALYSIS METHOD: Mod. 8015

QUALITY CONTROL REPORT

Laboratory Spike(LS) and Laboratory Spike Duplicate(LSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	LS Result	LSD Result	LS %Rec	LSD %Rec	RPD
Diesel	None	2500	2056.	1961.	82.	78.	5.

SURROGATES	LS %Rec	LSD %Rec
nC32	64.	54.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T104377-05A
EXTRACTION DATE:
ANALYSIS DATE: 05/02/91
ANALYSIS METHOD: 8020

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Benzene	ND<0.5	50.0	44.1	50.4	88.	101.	14.
Toluene	ND<0.5	50.0	43.9	50.5	88.	101.	14.
Ethyl benzene	ND<0.5	50.0	41.1	47.5	82.	95.	14.7
Xylenes	ND<0.5	150.	114.	130.	76.	87.	13.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	103.	104.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T104377-05B
EXTRACTION DATE:
ANALYSIS DATE: 05/03/91
ANALYSIS METHOD: Mod. 8015

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Gasoline	ND<50.	500.	627.	626.	125.	125.	0

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	78.	85.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 05/14/91
Client Work ID: GR3667,350 Grand Ave, Oakland

Work Order: T1-04-377

TEST CODE TPHND TEST NAME TPH High Boiling by (8015)

The method of analysis for high boiling hydrocarbons s taken from the LUFT field manual. Samples are extracted with solvent and examined by gas chromatography using a flame ionization detector. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

Gettler - Ryan Inc. T1-04-377 ENVIRONMENTAL DIVISION **2281 Chain of Custody**

COMPANY Shell JOB NO. ~~3667.02~~ CSO

JOB LOCATION 350 Grand

CITY Oakland PHONE NO. 783-7500

AUTHORIZED Tom Paulson DATE 4-25-91 P.O. NO. 3667.02

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
S-1	~~3~~ 5 CSO	H_2O	4-25-91/1514	THC(gas) BTXE, TPH-Diesel	Cool
S-2	~~3~~ ↓	↓	/1524	↓ , ↓	↓
S-3	~~3~~ 3	↓	/1533	THC(gas) BTXE	
Trip Blank	~~2~~ 2	↓	—	↓	

RELINQUISHED BY: 4/25/91 1650 RECEIVED BY: 4/25/91 1650

REFRIG #1

RELINQUISHED BY: Refrig #1 4-26-91 0830 RECEIVED BY: 4-26-91 0830

RELINQUISHED BY: 4-26-91 1450 RECEIVED BY LAB: 4-26-91 1450

DESIGNATED LABORATORY: IT (SCV) DHS #: 137

REMARKS: NORMAL TAT WIC # 204-5510-0204

DATE COMPLETED 4-25-91 FOREMAN